

## **REMARKS**

Applicant respectfully requests reconsideration and allowance of the subject Application. **Claims 1-14** were originally filed. Support for the foregoing amendments can be found in the original specification, claims or drawings – no new matter has been introduced. Accordingly, Claims 1-14 are pending as listed above.

### **35 U.S.C. § 103 CLAIM REJECTION**

Claims 1-8 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,587,882 B1 issued to Inoue et al. (hereinafter, Inoue) in view of U.S. Patent No. 6,651,105 issued to Bhagwat et al. (hereinafter, Bhagwat). Applicant respectfully traverses the rejection.

### **ABOUT THE CLAIMED INVENTION**

The claimed invention is directed to a technique for enabling a portable and/or mobile host, using the Mobile IP protocol, to dynamically acquire a home address in a manner consistent with the Dynamic Host Configuration Protocol when powering up in a foreign network. Ordinarily, mobile hosts that power up in a foreign network cannot contact addressing servers in their home network. The invention provides for a solution through transient tunneling – a two-stage addressing procedure for mobile hosts that power up in a foreign network. A bootstrapping agent – an addressing element that is co-located with a Mobile-IP home agent facilitates the creation of the temporary tunnel over which standard DHCP transactions can take place.

## REFERENCES

The Office cites Inoue and Bhagwat in the § 103 rejection. Inoue teaches a mobile IP communications scheme in which a visited site or nearby network of a mobile computer is utilized as a temporal home network of a mobile computer. (Inoue, Abstract) Inoue does not teach an addressing client that rests on the mobile host, rather Inoue teaches a home agent that maintains addressing sessions. The home agent taught by Inoue functions as a “mobile computer management device” that actively maintains dynamic addressing from an addressing proxy client. Inoue does not teach a home agent that is unaware of the use of addressing server applications, such as DHCP protocol. While Inoue teaches mobile IP communications, Inoue requires modification to the mobile IP standard. Thus it is not possible to deploy the invention taught by Inoue using standard home agent equipment.

Bhagwat is concerned with mobility across access points in a computer network without disrupting an active point-to-point connection. (Bhagwat, Abstract). While mobile IP protocol is described in Bhagwat, the mobile host device is used to establish a PPP connection over a PPP server (See Bhagwat, Col. 2, lines 59-61), and provides for a method for *preserving an already established PPP connection* during hands-off. (See Bhagwat, Col. 4, lines 44-46). Bhagwat does not teach using a mobile device to establish a connection to a DHCP server for dynamic addressing as it powers up in a network other than the home network and does not provide for a means to establish a connection to the home DHCP server using mobile IP protocol.

### **CLAIM ANALYSIS FOR § 103 REJECTION**

Independent Claim 1 recites a technique that allows a mobile host to power up in a foreign network, using mobile IP protocol, and to contact addressing servers in the home network by transient tunneling. Transient tunneling is carried out by a bootstrapping agent that “works cooperatively with a mobile IP home agent to allocate a temporary home address to a mobile host” and using the temporary home address to “create a temporary tunnel between a foreign agent associated with the portable and/or mobile host and the mobile IP home agent, wherein the tunnel is used to communicate configuration information including a permanent home address allocated by a DHCP protocol”.

The cited references do not teach or suggest this method. Inoue does not teach or suggest creating a “bootstrapping agent that works cooperatively with a mobile IP home agent to allocate a temporary home address to the host,” and “using the temporary home address to create a temporary tunnel between a foreign agent associated with the host and the mobile IP home agent, wherein the temporary tunnel is used to communicate configuration information including a permanent home address allocated by DHCP protocol” as recited in Claim 1.

The Office admits that the addressing feature is not taught by Inoue, but argues that Bhagwat teaches creating a bootstrapping agent that works cooperatively with a Mobile-IP home agent in the same manner as recited in Claim 1. (Office Action, Page 3, paragraph 2). Applicant respectfully disagrees.

Applicant’s invention defines a method that allows a mobile host in a foreign network to power up and connect to the Internet using the IP address of the home network.

Inoue teaches a communication method that uses a nearby network to create a home network – but does not use the permanent IP address of the home network. (Inoue, Col. 3, lines 33-40) Inoue is concerned with mobility over networks and management of change of addresses. (Inoue, Col. 4, lines 9-24) The method of Inoue, however, does **not** teach the mobile host providing the IP address of the home network, but rather a leased **temporal** home address. (Inoue, Col. 4, lines 25-33) Therefore, Inoue does not, as the Office suggests, teach a method that allows the host to dynamically acquire the home IP address of a mobile computer when in a foreign network. Inoue teaches standard mobile IP broadcasting, which cannot be used to contact addressing servers in the home network using DHCP. Thus, Inoue does not teach or suggest the method recited in Claim 1 of Applicant's invention. There is no discussion of reaching addressing servers in the home network, and for this reason alone Claim 1 is allowable over the cited reference.

The Office also cites Bhagwat as teaching a method for allocated a temporary address, and using the temporary home address to create a temporary tunnel to communicate configuration information including a permanent home address allocated by DHCP protocol. Applicant respectfully disagrees with Examiner's analysis. While Bhagwat briefly mentions "DHCP" it is as an illustration as to obtaining a *temporary* IP address. (See Bhagwat Col. 2, lines 38-56) Indeed, the function of a DHCP server is to assign IP addresses from a pool. However, Applicant respectfully asserts that the brief reference to DHCP was illustory and does not teach or suggest the method of Applicant. Furthermore, the DHCP address recited by Bhagwat at Col. 2 is **not** the permanent IP address of the

home network, as taught by Applicant, but rather a *leased* IP address from a pool of addresses reserved by a network *outside* of the home network.

Applicant asserts that Bhagwat teaches that when a mobile host *moves* to a new subnet other than its home subnet, it registers its current address with an agent in its home subnet called the “home agent”. The mobile host’s current address is the IP address of a foreign agent in the new subnet or a temporary IP address obtained by mechanisms such as DHCP. As well understood by those skilled in the art – the IP address of a foreign agent in the new subnet or a temporary IP address is the so-called “care of address”.

There is a clear distinction to make; the “care of address” as taught by Bhagwat is **not** the temporary home address recited in Applicant’s Claim 1. Dynamic home addressing, as required when a mobile host powers up in a foreign network, is not specified in the Mobile-IP standard. Specifically, a mobile host that powers up in a foreign network with no home address **cannot** contact addressing servers in its home network through conventional DHCP broadcasting. Any upstream broadcast messages sent from the mobile host to the home network will be received by a local server or relay in the foreign network, which may offer an address from its own lease pool, but **not** that the host’s home network. Therefore, the temporary address disclosed in Bhagwat is **not** a temporary home address as recited in Applicant’s Claim 1.

Furthermore, the method of Bhagwat teaches a method by which a mobile device may roam across access points without disrupting an active PPP connection. Contrary to Examiner’s statement, Bhagwat fails to teach a method using DHCP as required by the method of Applicant. Point to Point protocol allows a computer to connect to the Internet using a standard dial-up line and a

modem, but it does not dynamically assign IP addresses – as taught by the method of Applicant.

Accordingly, the combination of Inoue and Bhagwat fails to teach or suggest Claim 1. Applicant respectfully requests that the § 103 rejection of Claim 1 be withdrawn. Applicant respectfully believes that the two primary references cited by the Office as the basis for rejecting Claim 1 were not properly interpreted because neither reference teaches or suggests a mobile device to connect to the Internet when outside of the home network while using the IP address of the home network.

**Claims 2-8** depend from Claim 1 and are allowable by virtue of this dependency. Additionally, these claims recite additional features that, when taken together with those of Claim 1, define methods that are not taught or suggested by the Inoue/Bhagwat combination.

### **35 U.S.C. § 102 CLAIM REJECTION**

Claims 9-14 are rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,651,105 issued to Bhagwat et al. (hereinafter “Bhagwat”) Applicant respectfully traverses the rejection.

The Office cites Bhagwat in its § 102 rejection. Bhagwat is concerned with allowing a mobile device to roam from one access point to another using PPP protocol (Bhagwat, Abstract). While establishing, maintaining and terminating a PPP connection is discussed, Bhagwat provides for a method for *preserving an already established PPP connection* during hands-off. (See Bhagwat, Col. 4, lines 44-46).

### **CLAIM ANALYSIS FOR § 102 REJECTION**

For the reasons set forth in greater detail below, Applicant respectfully traverses the rejection of Claims 9, 10, 11, 12, 13 and 14, and request that these rejections be withdrawn.

The Office cites Bhagwat Col. 2 as teaching the method of Claims 9, 10, 12, 13, & 14 yet there are several distinctions between the method of Claims 9, 10, 12, 13, & 14 and the method of Bhagwat.

Firstly, similarly to independent Claim 1, independent Claims 9, 10, 12, 13, & 14, in amended form, recite a limitation “powers up in a foreign network” – a limitation not described by Bhagwat.

Secondly, unlike Bhagwat, independent Claims 9, 10, 12, 13, & 14, in amended form, deal with the use of dynamic host configuration protocol (DHCP) and not point-to-point (PPP) protocol as described by the method of Bhagwat. Applicant fails to see where Bhagwat teaches a method using dynamic host configuration. (Please see Bhagwat, Col. 3, lines 40-63 and Col. 4, lines 44-46) Independent Claims 9, 10, 12, 13, & 14 recite that configuration and addressing parameters are acquired dynamically “from a DHCP server in the home network” – whereas Bhagwat teaches using *PPP protocol* as the gateway to the Internet via a *PPP server*. PPP creates links between networks. DHCP is a client-server protocol that assigns addressing configuration and parameters that allow the client to acquire IP addresses for connecting to the Internet – which is a different addressing configuration entirely from PPP.

Thirdly, independent Claims 9, 10, 12, 13, & 14, in amended form, recite a *temporary home address* that is not described in Bhagwat. Bhagwat recites a

“care of address” – however, this is **not** the temporary home address recited in Applicant’s Claims 9, 10, 12, 13, & 14. Dynamic home addressing, as required when a mobile host powers up in a foreign network, is not specified in the Mobile-IP standard. Specifically, a mobile host that powers up in a foreign network with no home address **cannot** contact addressing servers in its home network through conventional DHCP broadcasting. Any upstream broadcast messages sent from the mobile host to the home network will be received by a local server or relay in the foreign network, which may offer an address from its own lease pool, but **not** that of the host’s home network. Therefore, the temporary address disclosed in Bhagwat is **not** a temporary home address as recited in Claims 9, 10, 12, 13, & 14. While the packet routing protocol taught in Col. 2 of Bhagwat may be important in maintaining seamless mobility in a host *already* connected to the Internet, it is not the same routing protocol described in the method of Claims 9, 10, 12, 13, & 14.

**Dependent Claim 11 recites:**

*The method of Claim 10 wherein additional configuration parameters are provided to the portable host device via the transient bi-directional communication link.*

The Office asserts that Bhagwat, in Cols. 7-8, teaches that additional configuration parameters are provided to the portable host via the transient bi-directional communication link. Applicants note that the method of Bhagwat teaches a single tunnel and tunnel redirection that act as a virtual link between a mobile device and a PPP server (see Col. 7). In contrast, Applicant’s Claim 10 provides for a method establishing a transient link between a foreign agent and a home agent that allows for configuration and addressing parameters to be sent



across the tunnel from the *DHCP server*. Bhagwat does not teach this limitation. As described above, a DHCP server is a different addressing configuration entirely from PPP and they are used for entirely different applications; PPP helps initiate a connection to the Internet and helps keep the connection open, whereas a DHCP server dynamically assigns IP addresses, not function to keep a connection open.

In view of the foregoing, it is respectfully asserted that the disclosure of Bhagwat does not anticipate the invention defined by Applicant's claims. For at least the reasons set forth above, Applicant respectfully asserts that the rejection of claims 9-14 under 35 USC 102(e) is improper and should be withdrawn.

### Conclusion

In view of the foregoing amendments and remarks, Applicant submits that claims 1-14 are in condition for allowance. Applicant respectfully requests reconsideration and issuance of the subject application. If any issues remain that preclude issuance of this application, the Office is urged to contact the undersigned attorney before issuing a subsequent Action.

Respectfully Submitted,

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